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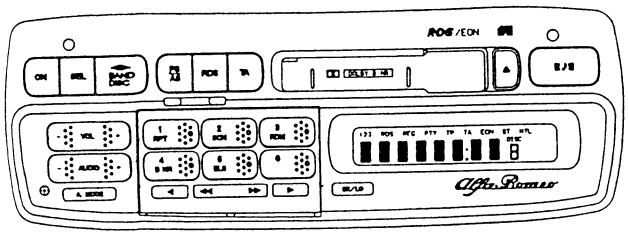
clarion Service Manual

Published by Service Information Section



ALFA ROMEO
RDS-EON/FM•MPX/MW/LW
Radio Cassette Combination
CD Changer Control

Model PU-9907A

(Part No. 60605395)

■SPECIFICATIONS:

Radio section

Circuit system:	Superheterodyne
Tuning system:	Electronic tuning
Receive range:	LW 153kHz to 279kHz
	MW 531kHz to 1,620kHz
	FM 87.5MHz to 108MHz
Intermediate frequency:	
	LW 450kHz
	MW 450kHz
	FM 10.7MHz
Quieting sensitivity:	LW Less than 42dB (at 20dB S/N)
	MW Less than 35dB (at 20dB S/N)
	FM Less than 12dB (at 30dB S/N)
Separation:	FM More than 20dB
Auto tuning stop sensitivity:	
	LW DX 20~40dB
	LO 47~63dB
	MW DX 20~40dB
	LO 47~63dB
	FM DX 15~35dB
	LO 37~53dB

Tape section

Reproduction system:	4 track, 2 channel stereo cassette tape playback
Tape speed:	4.76cm/sec (1-7/8 ips)
Wow and flutter:	0.30% (W.R.M.S)
S/N ratio:	More than 56/48dB, Dolby B ON/OFF(120 μs)
	More than 58/50dB, Dolby B ON/OFF(70 μs)
Cross talk:	More than 40dB
Separation:	More than 35dB
FF/REW time:	Less than 110 sec. (C-60)

Synthesis

Power supply voltage:	DC 13.5V(10.8 to 15.6V) Negative ground
Current consumption:	Less than 3mA (at ACC OFF)
Load impedance:	4Ω
Quieting power output:	More than 7W×4
Dimensions:	Width 178mm
	Height 50mm
	Depth 160mm
Weight:	1.5kg

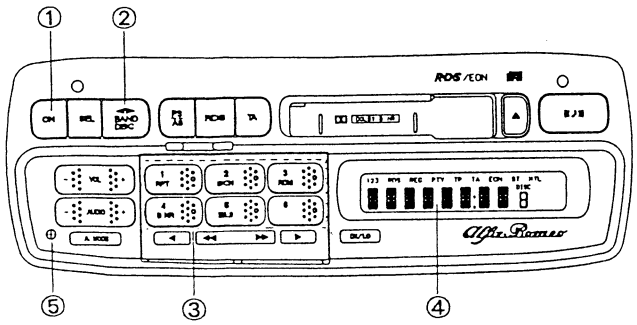
- Dolby Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

■COMPONENTS:

- **PU-9907A-A**

Main unit		1
DCP ass'y	DCP-032-110	1
DCP case	346-0071-01	1
Removal tool	341-1589-00	1

■CATS (Computer Anti-Theft System)

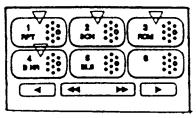


■ **CATS**
The following operations are necessary in order for your stereo radio cassette to start functioning. Follow the operation below to start your set.

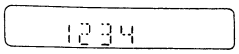
- **Start your set (Release CATS)**

1. Press the Power switch ① to turn the power on.
2. "**CODE IN**" appears on the display.
3. Input the code number, printed on your Customer Card, using the Preset buttons ③.
   The code number you have input appears on the display.

Example: code number 1234

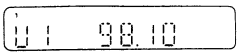


Display



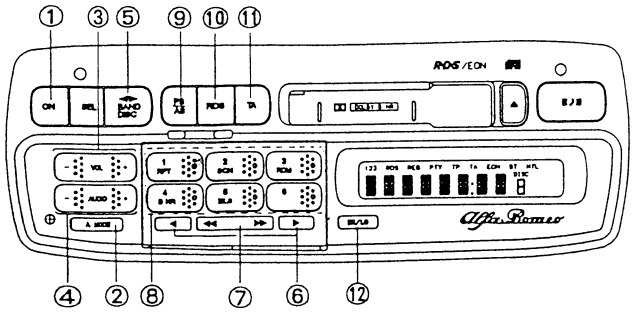
Press buttons 1, 2, 3 and 4, in that order.

4. If the input code number is correct, the radio turns on.
   A radio frequency appears on the display.



5. If the input code number is incorrect, the number remains on the display.
6. To input the code number again, press the BND switch ② for at least 3 seconds. "**CODE IN**" re-appears on the display. Input the correct code number.
7. If you input an incorrect code number three times in succession, it becomes impossible to leave from Anti-Theft Mode for one hour, even if the BND switch is pressed for over 3 seconds and you input correct code. If you again input an incorrect code number, you will have to wait another hour, and so on.

RADIO OPERATION



① Power Switch (ON)
Press once to turn the power on and once again to turn the power off.

② Audio MODE Button
This button is used to select the Bass, Treble Balance or Fader adjustment mode. The mode changes in the following order each time the button is pressed for under 2 seconds: Bass → Treble → Balance → Fader → Bass...
The mode is indicated on the display.

③ Volume Control (VOL)

⑤ Band Switch (BND)

⑥ Tuning Button

⑦ Tuning Button (SEEK)

■ **Using the Radio Data System (RDS)**

⑩ RDS Button
Set the RDS mode by pressing the RDS button ⑩, so the "**RDS**" indicator lights up. When you press the button again, this mode is released.

1. When an RDS station is received, the programme name is displayed. (PS: Programme Service Name)
2. If an emergency broadcast is received while an RDS station is being received, "**ALARM**" is displayed. The volume of the emergency broadcast is automatically set at the pre-set value.
3. If good reception of the RDS broadcast becomes impossible in your preset location, the "**RDS**" indicator starts blinking.
4. When seek tuning is carried out in the RDS mode, only stations broadcasting an RDS signal will be received.
5. • Preset San in RDS Mode
   When you press the PS button ⑨, Preset Scan will be carried out only on the RDS stations among the preset stations.
   • Auto Store in RDS Mode
   When you press the AS button ⑨ for more than 2 seconds, only RDS stations will be stored on the Preset buttons.

☆ **Same-Programme Search (PI: Programme Identification)**
Press the Preset button ⑧ on which an RDS station has been stored, and if this station is not received (the "**RDS**" indicator is blinking), press the same Preset button again. "**SEARCH**" will be displayed and a station broadcasting the same programme will be received.
(The PI code will be displayed for about 5 seconds if you hold down the RDS button ⑩ and press function button 1 (⑧) at the same time.)

☆ **Regional Programme Function (REG)**
REG ON (REG indicator lit):
Only local (regional) radio broadcasts in the local area will be sought.

REG OFF (REG indicator off):
If you are receiving a regional station in a certain area and you enter a different area, the regional station for that area will be received. In the RDS mode, the REG function will turn on/off each time you press the TA button ⑪ for more than 2 seconds.

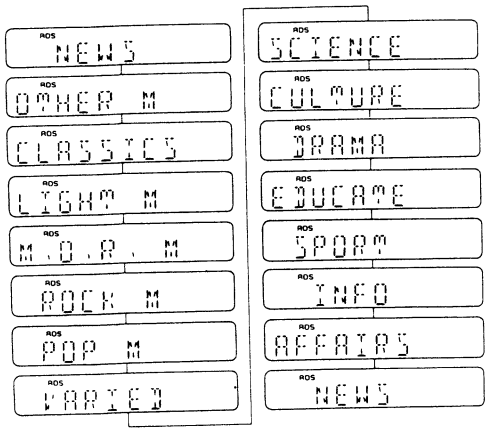
☆ **RDS EON (Enhanced Other Networks Information)**
When EON data is received for an RDS broadcast, the "**EON**" indicator will light up.

1. If you are waiting to receive traffic information, and the "**EON**" indicator lights up, traffic information will be broadcast when the traffic information begins, even if it is on a different station to the one you are currently receiving.
2. When the "**EON**" indicator is lit, if you press a Preset button ⑧, the station with the best signal in that area will be received instantly.

★ Certain countries and certain stations do not transmit EON data.

PTY (Programme Type)
The PTY function enables you to give the selected PTY broadcast listening priority when it begins. Press RDS button ⑩ for more than 2 seconds, PTY name will be displayed. PTY mode can be selected by pushing preset button ⑧ or tuning button ⑥. 5 seconds later after selecting PTY mode, "**PTY**" indicator will be illuminated and back to previous mode.
When you press button ⑩ again, the PTY wait state is released. However, if you press this button during a PTY broadcast, the PTY broadcast is cancelled and the PTY broadcast wait state becomes operative again. When the selected PTY broadcast is received, it is reproduced on your unit.

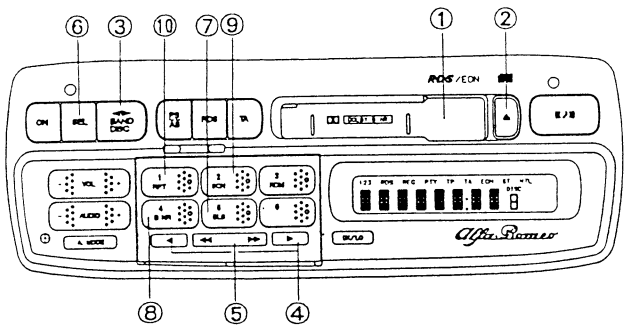
★ In the traffic information wait state, traffic information broadcasts have priority over PTY broadcasts.



⑪ TA (Traffic Announcement) Button
When traffic information begins, this is given top listening priority.
When you press the TA button, the "**TA**" indicator lights up, and a traffic information station is sought. If such a station is found, the "**TP**" indicator lights up, and the traffic information wait state becomes operative. When you press the TA button again, this state is released.
If you press the TA button while listening to traffic information, the traffic information broadcast is cancelled and the traffic information wait state becomes operative again.
If no traffic information station is found, "**NO TRA**" is displayed, so you then press the TA button to release the state. Traffic information is automatically reproduced at the preset volume.

1. When the traffic information begins, "**TRA INFO**" is displayed for about 5 seconds, after which the PS (Programme Service Name) or frequency is displayed.
2. While you are listening to traffic information, loudness is turned OFF.
3. Even if the "**TA**" indicator is lit, when a station not broadcasting traffic information is being received, a traffic information station will be sought when you press the TA button.
4. • Preset Scan when "**TA**" indicator is Lit:
   When you press the PS button ⑨, only stations broadcasting traffic information will be covered by the Preset Scan.
   • Auto Store when "**TA**" indicator is Lit:
   If you press the AS button ⑨ for more than 2 seconds, only stations broadcasting traffic information will be auto stored.

TAPE OPERATION



①Cassette Tape Slot Door
Metal Tape Detection
Correct equalization is automatically selected according to the tape used.
When you insert a 70 μsec. tape (such as a CrO_2, FeCr, or METAL tape), the unit detects and switches the tape equalization to 70 μsec. The "**MTL**" indicator will light.

②EJECT Button

③Play/Programme Switch

④Fast Forward/Rewind Button

⑤APC (Auto Programme Control) Switches

⑥Mode Select Switch
When listening to the radio and a tape has been inserted, pressing this switch will switch from the tuner to tape deck operation and playback starts automatically.

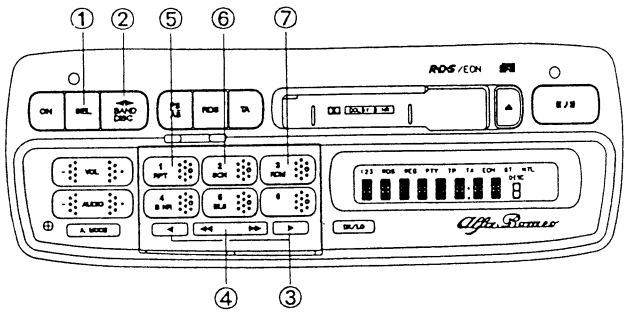
⑦Blank Skip Switch (BLS)

⑧Dolby NR Switch (B NR)

⑨Tape Scan Switch (SCN)

⑩Repeat Switch (RPT)

CD CHANGER CONTROL OPERATION



①MODE Selector Switch (CD)
This switch is used to switch from the tuner or cassette deck to the CD Changer mode. CD playback starts when this switch is pressed from the Tuner or Cassette mode.
When the CD Selector Switch is pressed, the power to the CD Changer is switched on, and playback starts from the first track on the first disc. (First time only)
If no magazine has been set in the CD Changer, "**NO MAGAZ**" will be displayed.

When the CD Selector Switch is pressed, the display will first show the disc number, and after that the track number. During actual disc play, both the track and the played time will be displayed.
Refer to the figure on the next page for the display messages:

Display System		
1	CD selection	CD WAIT DISC 8
2	DISC display	CD WAIT DISC 8 (DISC No.)
3	TRACK display	TRACK No. 08 00:00 DISC 8
4	During play	TRACK No. 08 P-TIME 00:08 DISC 8
	No magazine	NO MAGAZ
	No such disc	NO DISC

Last Position Memory Function

This function stores in memory the track that was being played when the power was switched off while a CD was playing or when another mode was selected. The next time playback on the CD Changer is started, play will begin from the beginning of the last track played.

② Dics UP Search Button

This button is used when you wish to listen to a different CD.
Pressing the Disc UP button ②, the CD Changer will set the next higher disc, the disc number will be displayed, and playback continues from the selected disc.
With each subsequent press of the button, the disc number will change and the disc corresponding to the number displayed on the digital display at that time will be played.
If there is no disc in the player corresponding to the displayed number, "**NO DISC**" will be displayed on the digital display and the player will automatically change to the next disc and play it.

③ Fast Forward/Fast Return

Keeping the right side of the TRACK button (▶) pressed, high-speed playback in the forward direction is engaged.
Keeping the left side of the TRACK button (◀) pressed, high-speed playback in the reverse direction is engaged.
Release the button to stop high-speed playback and resume normal playback.

④ Track Search

Press the right side of the TRACK button (▶▶) to start playback from the next track. Press the left side of the TRACK button (◀◀) to return to the beginning of the track currently being listened to and continue play from there.
To move ahead or back several tracks at once, press either side of the TRACK button repeatedly.

⑤ Repeat Switch (RPT)

Press the RPT switch once to repeatedly play back the current selection. The RPT indicator will light.
Press the RPT switch once more for repeat playback of the current DISC. The DISC and RPT indicators will light.
Press the RPT switch a third time to disengage repeat playback, and confirm that the DISC and RPT indicators go off.

⑥ Scan Switch (SCN)

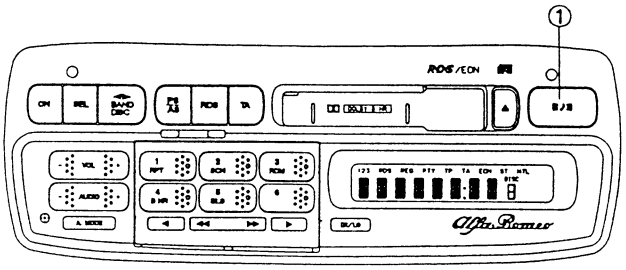
Pressing the SCN switch causes the indicator at the top of the switch to light and the CD Changer to play the first 10 seconds of each track on the loaded CDs.
When the track you are searching for is played, press the SCN switch again to continue playback of that track. At the same time the indicator will go off.

⑦ Random Play Switch (RDM)

Pressing the RDM switch causes the REW indicator will light, "**RANDOM**" is displayed, and random play of all tracks on the selected disc begins.
When all of the tracks on the disc have been played once, the next disc is selected and random playback of that disc continues.
When there are no more discs left in the magazine, random playback will start anew from the first disc in the magazine.
To cancel random playback, press the RDM switch once more and make sure "**RANDOM**" disappears from the display.

■ TEL. MUTE

When tel, call is received muting is activated and display shows "**TEL**". During this mode, if any operation is mode, display shows its operation mode for 5 sec. and back to "**TEL**" display.



① SF MODE SELECTOR Switch

When pressed while no S.F. mode is displayed, the currently set S.F. mode is displayed.
When pressed while S.F. mode is displayed, the S.F. mode switches in the following order:

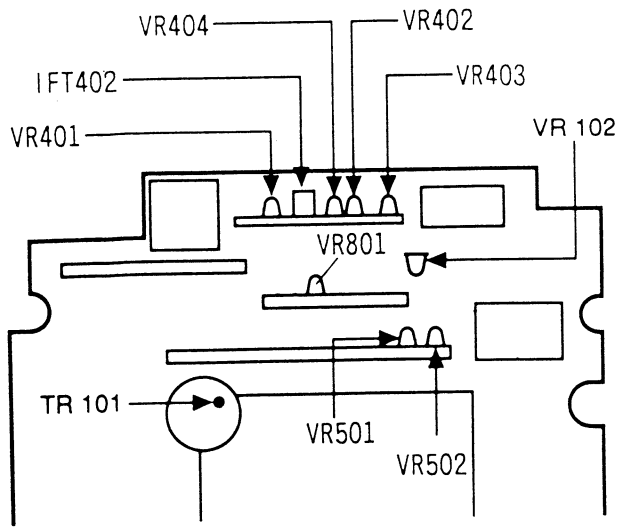
SF OFF → CLASSIC → ROCK → JAZZ → FLAT → SF OFF

■ADJUSTMENT:

ITEM	TEST-POINT	PROCEDURE
0V	IFT402	1. CONNECT THE DIGITAL VOLT-METER TO TP3 AND TP4. 2. INPUT THE 98.1MHz/30dB SIGNAL(no MOD), AND ADJUST THE READING OF DIGITAL VOLT-METER TO 0±20mV BY IFT402.
Limiter	VR403	1. INPUT THE 98.1MHz/65dB SIGNAL(400Hz, 30% MOD). [OUTPUT:0dB(0.245V)] 2. SET THE SSG OUTPUT TO 10dB, AND ADJUST THE OUTPUT LEVEL TO -3dB BY VR403.
SD	VR404	1. CONNECT THE TP11 TO THE GND. 2. INPUT THE 98.1MHz/24dB SIGNAL(400Hz, 30% MOD). 3. ADJUST VR404 SO THAT THE VOLTAGE OF TP5 IS IN THE RANGE 0V TO 5V.
S-meter	VR102	1. CONNECT THE DIGITAL VOLT-METER TO TP6. 2. INPUT THE 98.1MHz/35dB SIGNAL(no MOD). 3. ADJUST THE LEVEL TO 2.4±0.1V BY VR102.
SASC	VR402	1. INPUT THE 98.1MHz/65dB SIGNAL(7KHz 30% MOD). 2. SET THE OUTPUT TO 0dB BY VR402 FULLY COUNTER-CLOCKWISE. (0.775V) 3. SET THE SSG OUTPUT TO 43dB, AND ADJUST VR402 SO THAT THE OUTPUT LEVEL IS -2dB.
Separation	VR401	1. INPUT THE 98.1MHz, CONNECT THE OUTPUT OF A STEREO MODULATOR TO THE EXTERNAL MODULATION TERMINAL, AND INPUT A 65dB SIGNAL. 2. SET THE STEREO MODULATOR TO THE L OR R-ch AND ADJUST VR401 SO THAT THE MAXIMUM SEPARATION IS OBTAINED. (MORE THAN 20dB)
CW	VR801	1. CONNECT THE MILLI VOLT-METER TO TP8. 2. INPUT THE 98.1MHz/65dB SIGNAL(100Hz, MONO) AND ADJUST THE LEVEL TO 1.77V±1dB BY VR801.
Tape speed	TR101	1. INSERT A TAPE SPEED TEST TAPE (3000Hz). 2. ADJUST THE TAPE SPEED TO 2955~3090Hz BY TR101.
Dolby NR	VR501 VR502	1. INSERT A DOLBY LEVEL TEST TAPE (400Hz-200nWb/m), CONNECT THE MILLI VOLT-METER TO TP1(L) AND TP2(R). 2. ADJUST VR502(L) AND VR501(R) TO OBTAIN AN OUTPUT OF 388mV±1dB.

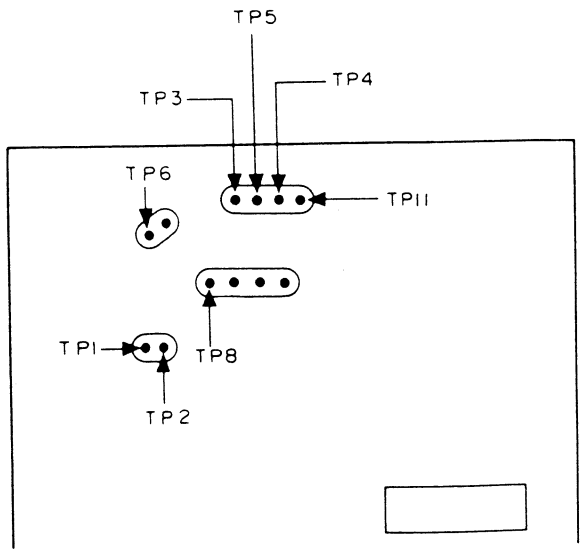
ADJUSTMENT POINT/TEST POINT

TOP VIEW



MAIN PWB

BOTTOM VIEW



MAIN PWB

■EXPLANATION OF IC's:

Note: Only new microcomputers are described here.

■ μPD75518GF-192-3B9 052-3119-00 System Controller
μPD75518GF-202-3B9 052-3120-00 (Mastar Micro Computer)

NOTE) The 052-3119-00 and the 052-3120 are master micro computers of SF and DSP versions respectively. Those terminals provided with * in the terminal description below are subject to NC (unused) in the 02-3120-00. For other terminals, each stated function applies t o both.

Outward Form

80 pin plastic QFP

Terminal Description

Pin No.	Symbol	I/O	Function
1	TOM/$\overline{GFX}$	I	GFX/TOM tape mechanism selecting terminal. L:GFX, H:TOM
2	AVREF	I	A/D conversion reference voltage.
3 4	V_{DD}	–	Power supply voltage terminal.
5	KS5	O	Key line selection, No.5
6	LCD LIGHT	O	LCD display light terminal. Lit up with "H".
7	WF CS	O	Selection of E-VOL for woofer.
8	AUX MON	O	"H" for master microcomputer operation.
9	A MUTE	O	Voice source mute.
10 11	ASEL1 ASEL2	O	Voice source selection.

Source	ASEL1	ASEL2
Stop	L	L
Radio	L	H
Tape	L	L
A/C*	H	L

Pin No.	Symbol	I/O	Function
12	MAIN 5V	O	Power supply control for peripheral IC. Indication driver, C-bus buffer, rotary controller, tape mode SW input, A/C CONT and so on.
13	POWER	O	Power supply control for peripheral IC. Indicating LCD, electronic volume, voice source, power supply for tape, audio and radio, and antenna.
14	AMP ON	O	Standby release control for power amplifier.
15	DISP CS1	O	Selection of indication driver 1.
16	DISP CS2	O	Selection of indication driver 2.
17 18 19	SI SO SCLK	I O O	Data transfer I/O, indication driver in use.
20	KS4	O	Key line, selection of No.4.
21 ⌇ 28	KI7 ⌇ KI0	I	key scan input terminal.
29 ⌇ 32	KS3 ⌇ KS0	O	key scan signal output terminal.
33	GND	–	GND terminal.
34*	VOL CS	O	Electronic volume selection.
35	E2PROM CS	O	E2 PROM selection.
36 37 38	D-D0 D-CLK D-DI	O O I	Used for data output, clock input, electronic volume, E2 PROM, and S-PIC.
39	S-PCS	O	Series/parallel IC selection.
40 41	VOL-A VOL-B	I	Rotary encoder input.
42	MECH POWER	O	Cassette power supply control, main motor control, power motor and photo-reflector.
43 44	SBI ADR SBI CMD	O	Support for tuner microcomputer SJB functions, and control for C-bus communication.

Transfer Type	ADR	AMD
Data	0	0
Command	0	1
Address	1	0

Pin No.	Symbol	I/O	Function
45	BUZZR	O	Buzzer transmission output.
46	SVL SRQ	I	C-bus slave request.
47	NC	–	Unused.
48	BACK UP	I	Detection of Vdd power ON. "L" for power supply drop.
49	NC	–	Unused.
50 51 52	SI SO SCLK	I O O	Data input and output and clock used for C-bus communication.
53	ACC ON	I	Accessory power supply detection. "H" for ACC ON.
54	GND	–	GND terminal.
55 56	XT1 XT2	–	System sub clock terminal.
57	GND	–	GND terminal.
58 59	X1 X2	–	System clock terminal (4.19 MHz).
60	RESET	I	System reset terminal.
61	NC	–	Unused.
62	DOLBY	O	Tape Dolby output. "L" for Dolby ON.
63	FWD/REV	O	Preamplifier signal changeover according to tape running direction. "H" FF/Rew, "L":FWD.
64	MECH MUTE	O	Mute and preamprefier control during tape running. "H": FF/Rew condition, "L": Others.
65	MTL OUT	O	Metal tape changeover output. "H" for tape running condition.
66 67	P MOTER 1 P MOTER 2	O	Tape motor drive control to control operational condition of GFX mechanism.

Control mode	PM1	PM2
Stop	L	L
Loading direction	H	L
Eject direction	L	H
Brake	H	H

Pin No.	Symbol	I/O	Function
68	M MOTER	O	Tape reel motor control, "H" for motor ON.
69 70 71	MODE SW3 MODE SW2 MODE SE1	I	Detects mode status of tape mechanism.

MODE STATUS	SW3	SW2	SW1
EJECT END	H	H	H
Loading/ejecting	L	H	H
STOP	L	H	L
-GAP-	H	H	L
FF PLAY direction FF	H	L	L
-GAP-	H	L	H
REW PLAY direction FF	L	L	H
-GAP-	L	L	L
FF PLAY direction PLY	H	L	L
-GAP-	H	L	L
REW PLAY direction PLY	H	H	L

Pin No.	Symbol	I/O	Function
72	TAPE IN	I	Pack detection input, "H": Pack is present - From loading to pack IN.
73	AV_{SS}	–	A/D convertor reference GND.
74	APC DET	I	Music detection input, "L": Presence level, "H": Absence level.
75	MTL IN	I	Tape metal detection. "L": Normal, "H": Metal.

Pin No.	Symbol	I/O	Function
76	REEL PULSE	I	Reel rotation detection for tape running. "L/H" changes: On rotation.
77	TEL IN	I	Telephone status. "H" for being used.
78	AUX S ON	I	Auxiliary slave operation status. "L":Auxiliary slave on operation.
79	REMOCON	I	Remote control input. Sorted into 10 categories according to A/D conversion.
80	MOD SEL	I	Provided with mode key. With "H", mode key provided.

Key Matrix

Key matrix Table

Out put / Input	KS-0 (32Pin)	KS-1 (31Pin)	KS-2 (30Pin)	KS-3 (29Pin)	KS-4 (20Pin)	KS-5 (5Pin)
K1-0 (28Pin)		LOUD KEY PRESENCE/ ABSENCE	SUB-WOOFER PRESENCE/ ABSENCE ※	VOL MODE SEESAW/ ENCODER	ACC OFF 1 H OPERATION PRESENCE/ ABSENCE	T-MODE PRESENCE/ ABSENCE
K1-1 (27Pin)		(LAN/ALF)	CH 1ND LED/7 SEG.	SF/DSP PRESENCE/ ABSENCE	CLOCK & TEMP PRESENCE/ ABSENCE	
K1-2 (26Pin)	⟩⟩| (SEEK UP, FF, TRK UP)	|⟨⟨ (SEEK DN, RW APC, TRK DN)	VOL-UP	VOL-DOWN	MUTE	
K1-3 (25Pin)	⟩⟩/⟩⟩| (TUNE UP, FF/APC, TRKUP/FF)	T MODE/ DX/LO	M3 RDM	M6 (MTL)	H	
K1-4 (24Pin)	|⟨⟨/⟨⟨ (TUNE DN, RW/APC, TRK UP/FB)	PS/AS	M2 SCAN	M5 BLS (APC)	M	
K1-5 (23Pin)	BAND/ PLAY·PRO/ DISC·SEL	MODE (RADIO, TAPE, CD)	M1 RPT	M4 DOLBY	M RESET	
K1-6 (22Pin)	TAPE· EJECT	LOUD	RDS/PTY	TP/REG	SOUND F DSP	
K1-7 (21Pin)	POWER	AUDIO UP	AUDIO DOWN	A MODE/ LOUD	POSITION	

:Momentary SW. :Diode SW.

Diode SW

※ In the table below, "0" means the diode SW is OFF (open) and "1" ON (short).

SW Name	Function
LOUD key	SW to select presence/absence of LOUD key. 1 : LOUD key is present. 0 : LOUD key is absent.
Woofer *	SW to select presence/absence of woofer. 1 : Woofer is present. 0 : Woofer is absent.
VOL mode	SW to select encoder/seesaw for volume mode. 1 : Encoder. 0 : seesaw.
ACC OFF	SW to select presence/absence of 1 H operation of Acc OFF. 1 : Present. 0 : Absent.
T MODE	SW to select presence/absence of tuning mode. 1 : Tuning mode is absent. 0 : Tuning mode is present.
LAN/ALF	Unused.
CH IND	SW to select presence/absence of channel indicator. 1 : Channel indicator is present 0 : Channel indicator is absent.
SF/DSP	SW to start sound flavor or DSP function. 1 : Function is present. 0 : Function is absent.
CLOCK&TEMP	Unused.

■PARTS LIST:

◎ Electrical section

• SW PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D1101	001-0207-00	LED TLR124	1
C1101.1104 1107	043-1601-10	CHIP-C 0.1 μF	3
IC1101	051-1345-15	IC MB88307APFG	1

REF NO.	PART NO.	DESCRIPTION	QTY
IC1102.1103	051-6005-00	IC LC75821E	2
C1102.1105 1108	176-1012-00	CHIP-C 100pF	3
C1103.1106	178-6812-78	CHIP-C 680pF	2

• Tape mechanism PWB

REF NO.	PART NO.	DESCRIPTION	QTY
C6.7	042-0476-01	ELE-C 10V 33 μF	2
IC1	051-1546-10	IC BA3430S	1
C8.9	173-1231-11	POLY-C 0.012 μF	2
C1-4.12	175-5611-50	CHIP-C 560pF	5
C11	183-1043-61	ELE-C 50V 3.3 μF	1

REF NO.	PART NO.	DESCRIPTION	QTY
C14	183-2263-31	ELE-C 16V 22 μF	1
C13	183-4743-61	ELE-C 50V 0.47 μF	1
C10.15.16	183-4753-51	ELE-C 35V 4.7 μF	3
C5	183-4763-11	ELE-C 6.3V 47 μF	1

• Main PWB

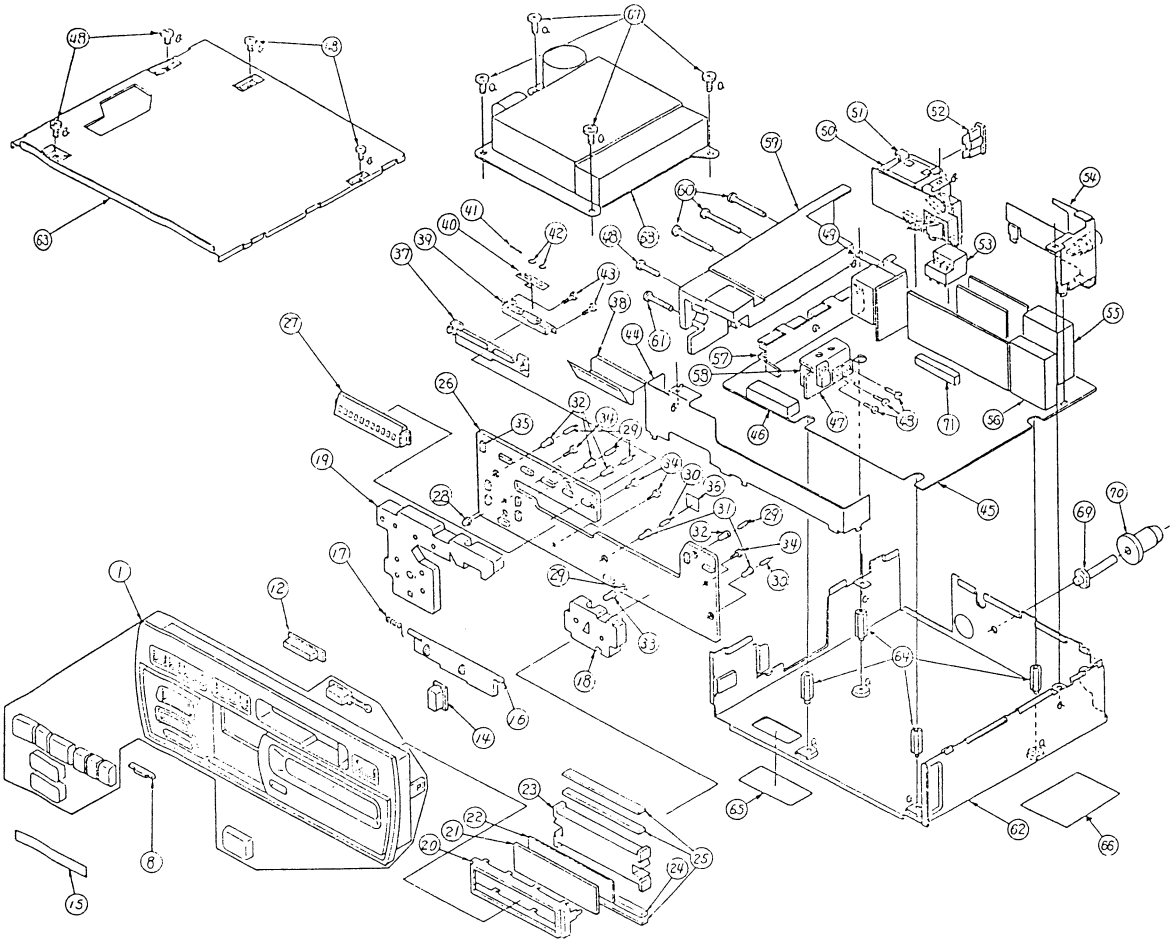
REF NO.	PART NO.	DESCRIPTION	QTY
D102	001-0188-31	DIODE 1S1885A	1
D118.151	001-0356-00 001-0354-00	DIODE 1SS134 MA151WK	2
D150.313	001-0356-05 001-0354-05	DIODE 1SS131 MA151WA	2
D148.300.402	001-0367-00 001-0541-00	DIODE 1SS226 MA157A	3
D113	001-0377-34 001-0376-34	DIODE MA4062L MTZJ6.2A	1
D116	001-0377-38 001-0376-39	DIODE MA4068M MTZJ6.8C	1
D126	001-0377-47 001-0376-48	DIODE MA4091M MTZJ9.1C	1
D119	001-0377-48 001-0376-49	DIODE MA4091H MTZJ10A	1
D115	001-0377-50 001-0376-51	DIODE MA4100M MTZJ10C	1
D109	001-0423-29	DIODE MA4150	1
D103.104.105 114.301.304 312	001-0466-00 001-0626-00	DIODE S5688B 1-2	7
D122.128-130 134.135.137 138.140.142 146.147.309 310.311.301	001-0516-00	DIODE MA111	16
D303	001-0523-45	DIODE MA3082H	1
D145	001-0638-00 001-0330-00	DIODE MG713A 1SS119	1
TH101	302-0222-00	THERMISTOR	1
IFT401	305-1022-51	IF-TRANS	1
IFT402	305-1035-00	IF-TRANS	1
T102	309-0470-02	CHOKE	1
T103	309-0652-00	CHOKE	1
L101	310-2003-04	COIL	1
L401	310-2174-36	COIL 1mH	1
L402	310-2199-16	COIL 2.2 μH	1
L108.109.111	310-2230-14	COIL 2.2 μH	3
L103.110	310-2230-28	COIL 33 μH	2
VR301	012-4318-04	VARIABLE-R 3.3k	1
VR501.502	012-4318-06	VARIABLE-R 10k	2
VR102	012-4738-12	VARIABLE-R 330k	1
VR404	012-4863-06	VARIABLE-R 10k	1
VR401.402	012-4863-07	VARIABLE-R 22k	2
VR403	012-4863-09	VARIABLE-R 47k	1
IC105	051-0350-55	IC NJM4558M	1
IC301	051-0556-01	IC NJM2058M	1
IC502.503	051-0853-01	IC M5201FP	2
IC501	051-1038-01	IC CXA1102M	1
IC104	051-1014-10	IC TA7291S	1
IC112	051-1046-46	IC LC35178ML	1
IC402	051-1250-00	IC TC4366F	1
IC113	051-1375-35	IC	1
IC401	051-1525-00	IC TA8172AF	1
IC103	051-1556-05	IC S-30740AN	1
IC302	051-1819-00	IC SAA6579T	1
IC109	051-1822-05	IC S-30732AN	1
IC102	051-1834-00	IC LM2936	1
IC850.851	051-2007-00	IC TDA8560Q	2

REF NO.	PART NO.	DESCRIPTION	QTY
IC504	051-5001-00	IC M51139FPH	1
IC111	051-7400-06 051-0160-06	IC HD74LS07FP SN74LS07NS	1
IC115	052-1103-01	μPD17006AGF-625-3B9	1
IC114	052-3119-00	μPD75518GF-132-3B9	1
SUP101	060-0122-10	SURGE PROTECTOR	1
X101	060-0130-50	CERA-RESONATOR	1
FL3101	060-0235-00	BAND-PASS-FILTER	1
X401	060-0240-00	CERA-RESONATOR	1
X102	061-1053-00	CRYSTAL 4.5MHz	1
X301	061-3013-00	CRYSTAL-OSC	1
Q104.150	100-1162-50 100-1179-50	TR 2SA1162-YG 2SA1179-567	2
Q123.126.129	100-1313-00	TR 2SA1313-OY	3
Q107.110.116	100-1428-00	TR 2SA1428-OY	3
Q303	100-1431-00	TR 2SA1431-OY	1
Q300	101-0941-00	TR 2SB941-PQR	1
Q112.121	101-1243-00	TR 2SB1243-NPQR	2
Q109.125 139.142.301	102-2712-00 102-2412-00	TR 2SC2712-OYGL 2SC2412-KQRS	5
Q111.120.403 130.132	102-2712-51 102-2412-50	TR 2SC2712-GL 2SC2412-KRS	5
Q406	102-2715-00	TR 2SC2715	1
Q119.134	102-3420-00	TR 2SC3420-YGRBL	2
Q114.117	102-3624-00	TR 2SC3624-AL1516	2
Q850-853	103-1306-00	TR 2SD1306DE	4
Q113	103-1858-00	TR 2SD1858PQR	1
Q404	108-0372-00	FET 2SK372	1
Q127.145	125-3002-03 125-3001-02	TR RN2403 UN2112	2
Q135	125-3013-04	TR RN2424	1
Q124.136	125-3013-07	TR RN2427	2
Q302	125-2004-01 125-2020-01	TR RN1401	1
Q105.122.131 137.148.306 402.405.501	125-2004-03 125-2005-02 125-2020-03	TR RN1403	9
Q106.109.115 141	125-2017-04	TR RN1424	4
R133	114-2291-11	FILM-R 1W 2.2Ω	1
R115	114-2711-21	FILM-R 2W 270Ω	1
C411	043-1600-39	CHIP-C 0.039 μF	1
C416.421.422 424.427	043-1600-47	CHIP-C 0.047 μF	5
C808	043-1600-56	CHIP-C 0.056 μF	1
C118.415	043-1600-68	CHIP-C 0.068 μF	2
C129.131.186 187.189.192 202.213.307 410.428.434 526-528.555 303.811.815 863	043-1601-10	CHIP-C 0.1 μF	20
C123.356.857	172-1041-10	POLY-C 0.1 μF	3
C169	172-2231-10	POLY-C 0.022 μF	1
C140	172-4731-10	POLY-C 0.047 μF	1
C194.197	176-1007-00	CHIP-C 10pF CH	2
C200.519.521 707-714	176-1011-00	CHIP-C 100pF CH	11

REF NO.	PART NO.	DESCRIPTION	QTY
C190,191,433	176-2201-00	CHIP-C 22pF CH	3
C535,536	176-2211-00	CHIP-C 220pF CH	2
C438	176-2701-00	CHIP-C 27pF CH	1
C432,809,814	176-3311-00	CHIP-C 330pF CH	3
C816	176-4701-00	CHIP-C 47pF CH	1
C547,548,810	176-5611-00	CHIP-C 560pF CH	3
C520,522	176-6801-00	CHIP-C 68pF CH	2
C403	176-6811-00	CHIP-C 680pF CH	1
C817	176-8201-00	CHIP-C .2pF CH	1
C537,538	177-1242-05	CHIP-C 0.12 μF	2
C306,407,529 C530,545,546	177-2242-05	CHIP-C 0.22 μF	6
C195,196,199 C205,207,208 C211,316,317 C418,425,429 C431,436,854 C855,860,861	178-1022-05	CHIP-C 1000pF	18
C103,104,108 C113,124,127 C133,401,430	178-1032-05	CHIP-C 0.01 μF	9
C154,155,549 C550	178-1532-05	CHIP-C 0.015 μF	4
C419	178-2222-05	CHIP-C 2200pF	1
C146,147,417 C437	178-2232-05	CHIP-C 0.022 μF	4
C804	178-2732-05	CHIP-C 0.027 μF	1
C130	178-4722-05	CHIP-C 4700pF	1
C541,542	178-8222-05	CHIP-C 8200pF	2
C128	042-0171-00	TAN-C 16V 47 μF	1
C172,404,406	042-0397-00	CHIP-C 16V 1 μF	3
C409	042-0397-06	CHIP-C 35V 0.1 μF	1
C441	042-0397-07	CHIP-C 16V 0.68 μF	1
C423	042-0403-01	CHIP-C 16V 10 μF	1
C358,359	042-0447-00	ELE-C 16V 2200 μF	2
C204	042-0450-00	ELE-C 6.3V 470 μF	1
C144,525	042-0452-01	ELE-C 10V 220 μF	2

REF NO.	PART NO.	DESCRIPTION	QTY
C805	182-1056-62	ELE-C 50V 1 μF NP	1
C511,516	182-1066-23	ELE-C 10V 10 μF NP	2
C539,540	182-4756-32	ELE-C 16V 4.7 μF NP	2
C114,135,413 439	182-4763-33	ELE-C 16V 47 μF	4
C180,308,414 435,507,508 807	183-1053-61	ELE-C 50V 1 μF	7
C126,137,138 142,166,131 212,309,433 408,412,420 426,442,512 523,524 801,802,806	183-1063-31	ELE-C 16V 10 μF	20
C122	183-1063-52	ELE-C 35V 10 μF	1
C510	183-1073-11	ELE-C 6.3V 100 μF	1
C132,141,173	183-1073-22	ELE-C 10V 100 μF	3
C812,531,532	183-2253-61	ELE-C 50V 2.2 μF	3
C533,534 543,544,553 554,556,557	183-2256-51	ELE-C 35V 2.2 μF NP	8
C362	183-2263-31	ELE-C 16V 22 μF	1
C139	183-3343-62	ELE-C 50V 0.33 μF	1
C182-185	183-3353-61	ELE-C 50V 3.3 μF	4
C504,506,509	183-3363-21	ELE-C 10V 33 μF	3
C850-853	183-4743-61	ELE-C 50V 0.47 μF	4
C501,502	183-4753-51	ELE-C 35V 4.7 μF	2
C405	183-4763-11	ELE-C 6.3V 47 μF	1
C305,511,513 514	183-6843-61	ELE-C 50V 0.68 μF	4
C315	183-6853-41	ELE-C 25V 6.3 μF	1
C136	183-6863-21	ELE-C 10V 68 μF	1
C170	184-2273-22	ELE-C 10V 220 μF	1
C300	184-4763-52	ELE-C 35V 47 μF	1
C125	184-4773-31	ELE-C 16V 470 μF	1

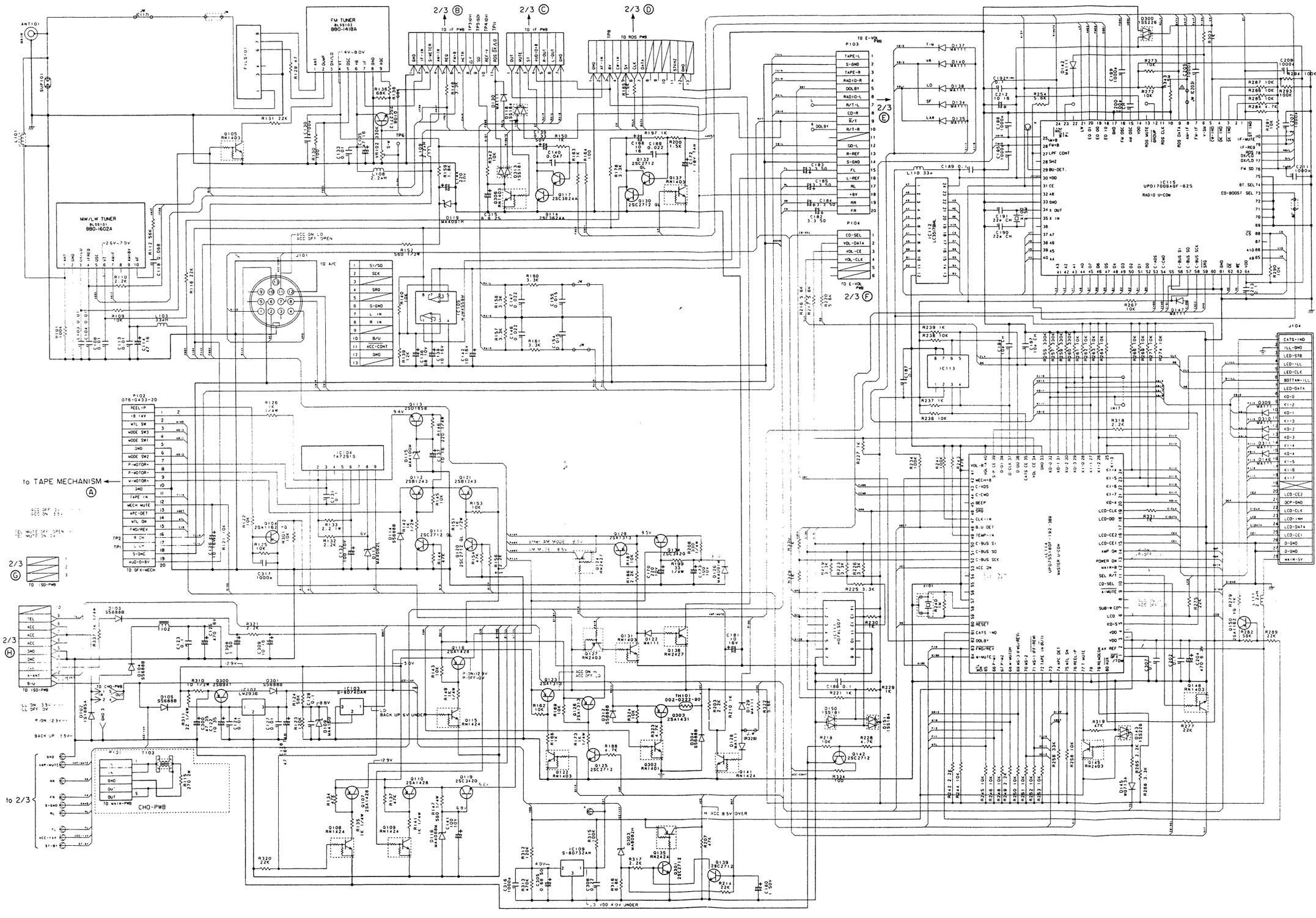
■EXPLODED VIEW•PARTS LIST:



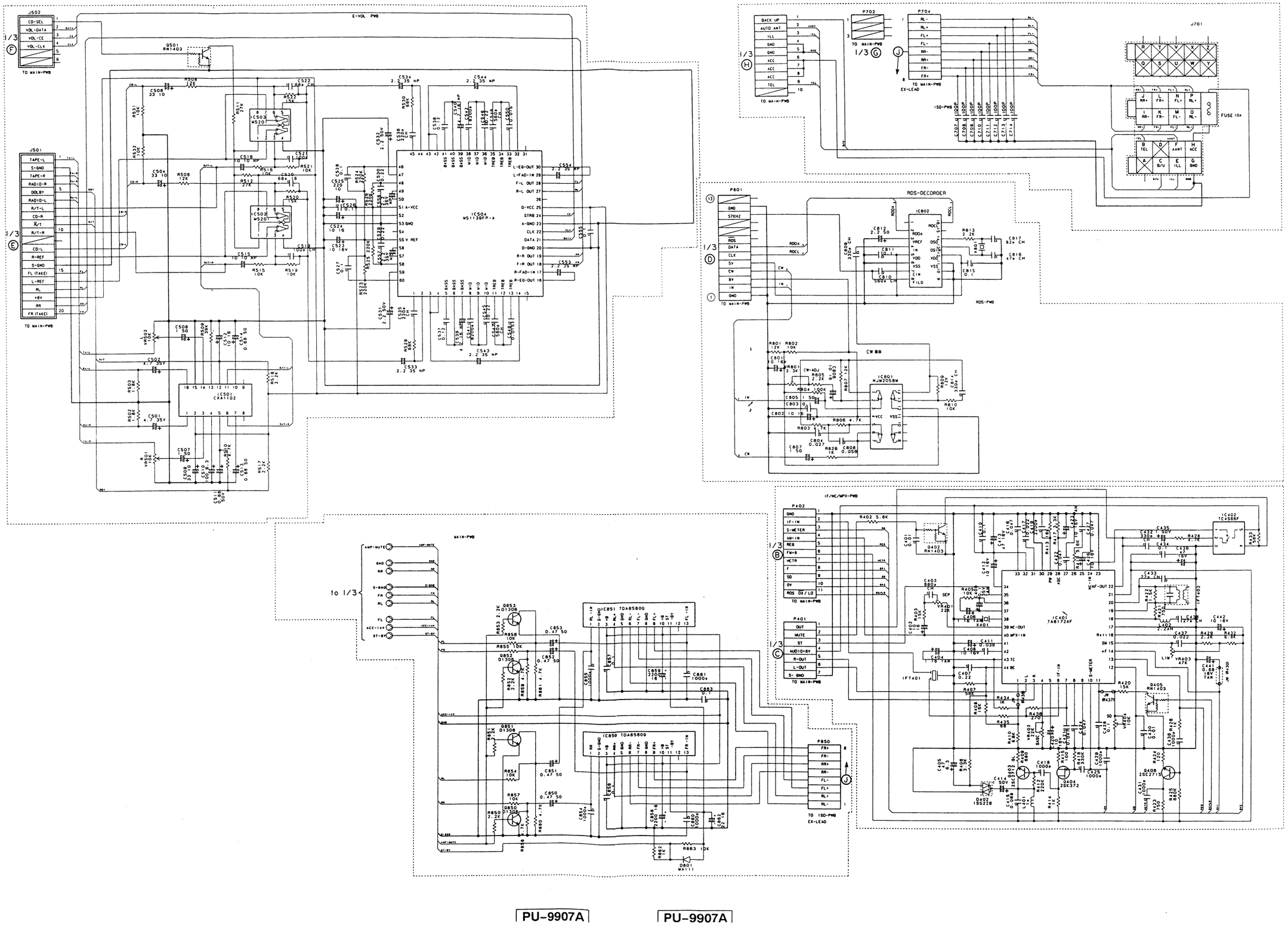
NO	PART NO.	DESCRIPTION	QTY
1	940-7681-00	SUB ESCUT-ASSY	1
3	940-1690A	ESCUTCHEON ASSY	1
8	382-3770-00	BUTTON*DCP	1
12	382-3781-00	BUTTON*A.MUDE	1
14	382-3777-00	BUTTON*EJECT	1
15	290-6073-00	LABEL	1
16	320-0391-41	DUSTPROOF-CVR	1
17	750-2309-01	SPRING	1
18	335-4774-00	ILLUMI PLATE	1
19	335-4773-00	ILLUMI PLATE	1
20	331-0157-00	LCD HOLDER	1
21	379-1016-20	INDICATOR	1
22	335-4527-00	REFLECTOR	1
23	335-4524-00	LCD-ILLUMI	1
24	345-7366-00	RUBBER CONNECTOR	2
25	347-3818-00	SPACER	2
26	039-0337-00	SWITCH PWB	1
27	074-0913-00	OUTLET SOCKET	1
28	001-0207-00	LED	1
29	017-0361-01	PILOTLAMP	5
30	017-0411-00	PILOTLAMP	2
31	345-7148-09	LAMP CAP	2
32	345-3814-71	LAMP CAP	4
33	345-4441-73	LAMP CAP	1
34	702-2005-81	TAP SCREW	4
35	013-3812-11	SWITCH	14
36	353-0359-00	SHADE	1
37	331-0296-00	CONNECTOR HOLDER	1
38	039-0304-00	FLEX PWB	1
39	331-0297-00	PLATE HOLDER	1
40	330-9395-01	HOOK PLATE	1

NO	PART NO.	DESCRIPTION	QTY
41	750-2638-00	FF-GEAR SPRING	1
42	743-1500-20	E-RING	2
43	716-0674-00	SCREW	2
44	331-0295-00	FRONT PLATE	1
45	039-0305-01	MAIN PWB	1
46	074-0855-28	OUTLET SOCKET*28P	1
47	313-1423-00	HEAT SINK	1
48	714-2608-81	MACHINE SCREW	8
49	331-0160-00	CHOKE HOLDER	1
50	074-0930-08	OUTLET SOCKET*ISO 26P	1
51	330-9391-01	BACK PLATE	1
52	060-0057-56	AUTO-FUSE*10A	1
53	074-0818-00	OUTLET SOCKET*13P DIN	1
54	331-0161-21	ANT-HOLDER	1
55	880-1418A	FM TUNER BLOCK	1
56	880-1602A	MW/LW TUNER BLOCK	1
57	331-0298-01	IC-HOLDER	1
58	330-9409-01	HEATSINK HOLDER	1
59	313-1564-00	HEAT SINK	1
60	716-1706-00	MACHINE SCREW	3
61	714-2614-81	MACHINE SCREW	1
62	311-1591-12	LOWER CASE	1
63	310-1527-02	UPPER CASE	1
64	716-1461-00	SPACER	4
65	290-4411-00	LABEL	1
66	286-8181-05	SETPLATE	1
67	716-0878-00	IT-SCREW	4
68	930-0735-00	TAPE-MECHANISM*GFX	1
69	716-1489-00	REAR BOLT	1
70	345-4847-01	STOPPER	1
71	076-0433-20	PLUG*20P	1

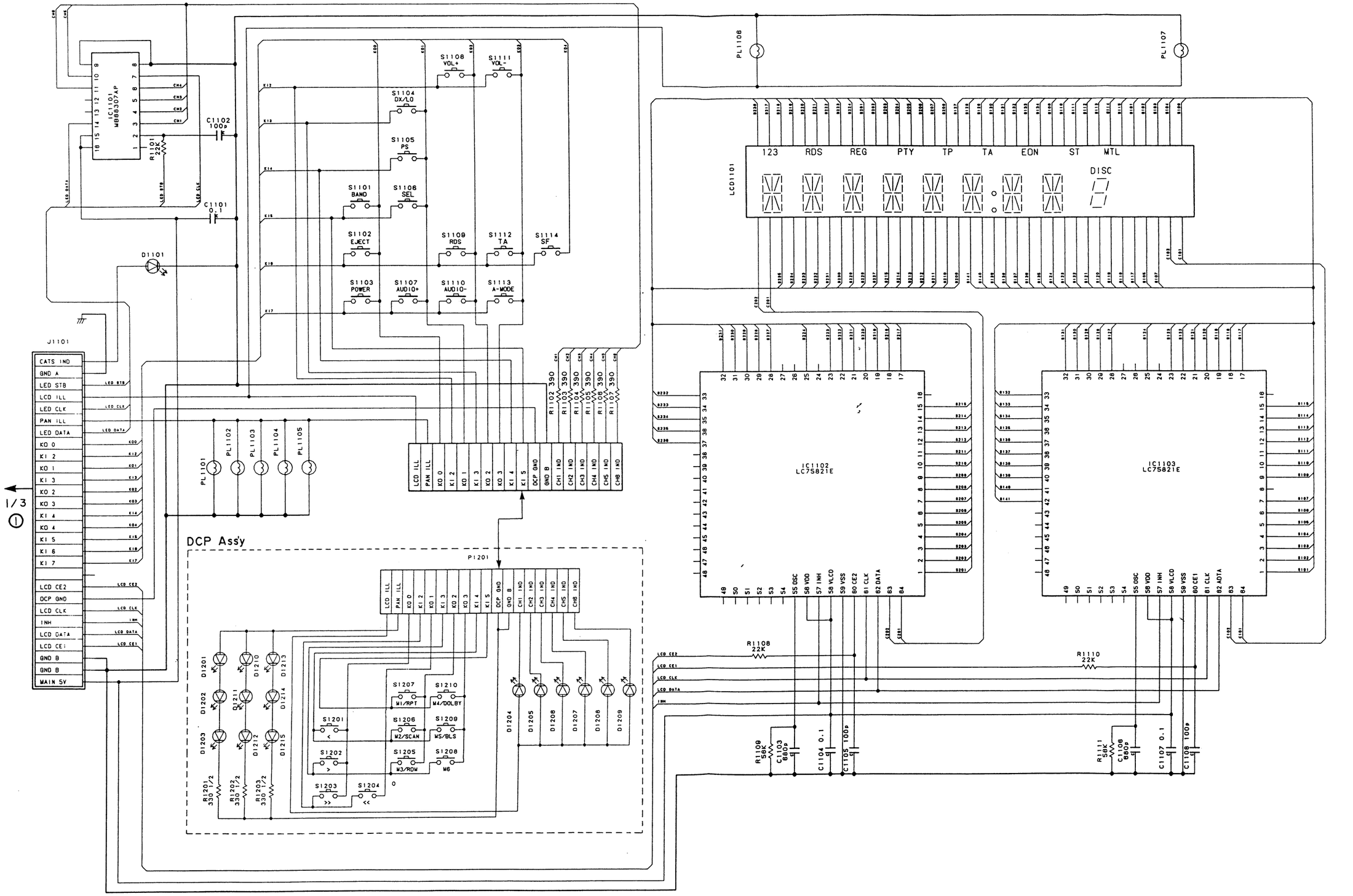
■CIRCUIT DIAGRAM: 1/3



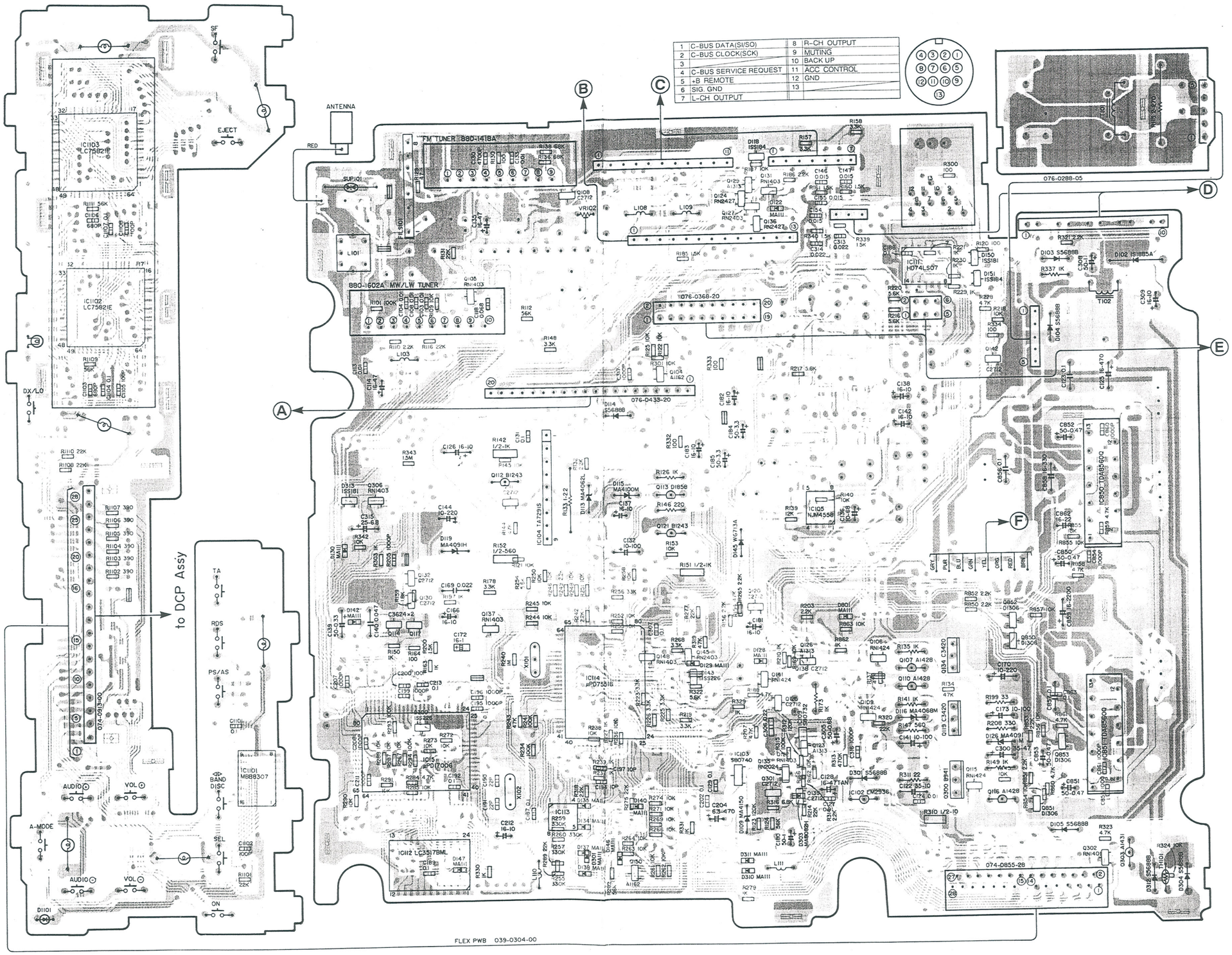
■CIRCUIT DIAGRAM: 2/3



■CIRCUIT DIAGRAM: 3/3

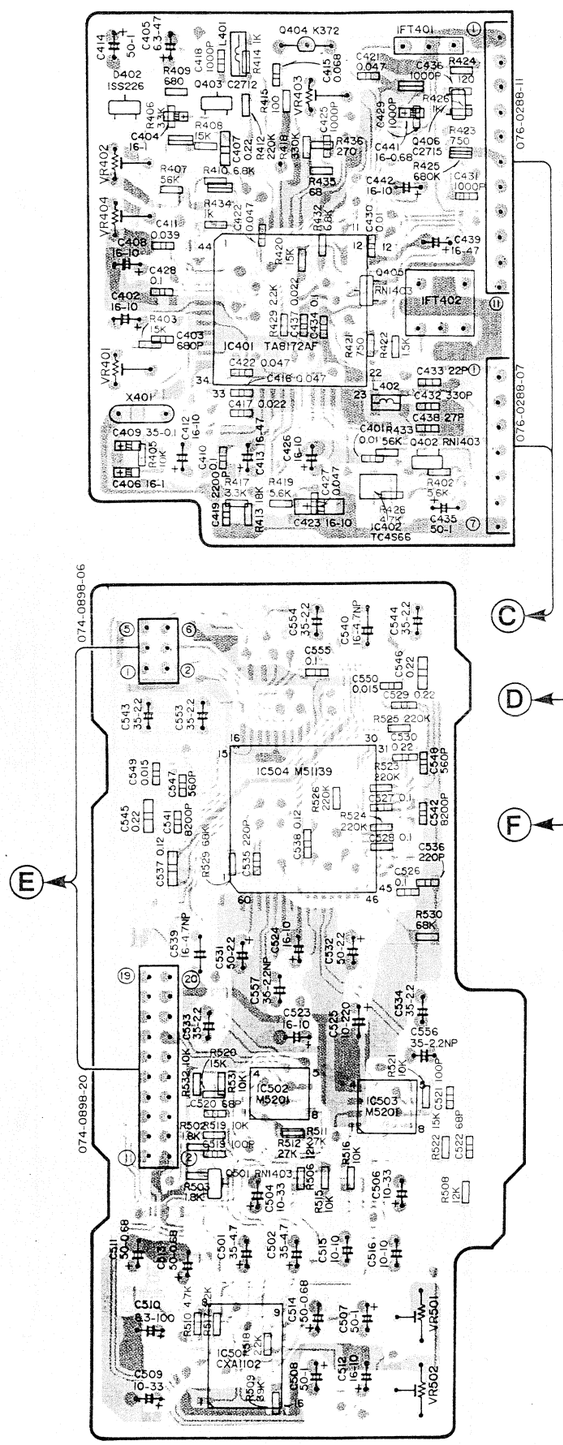


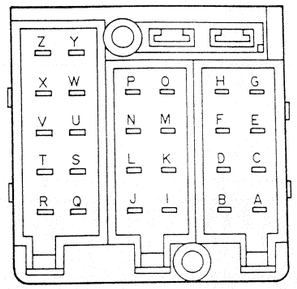
■PRINTED WIRING BOARD: 1/2



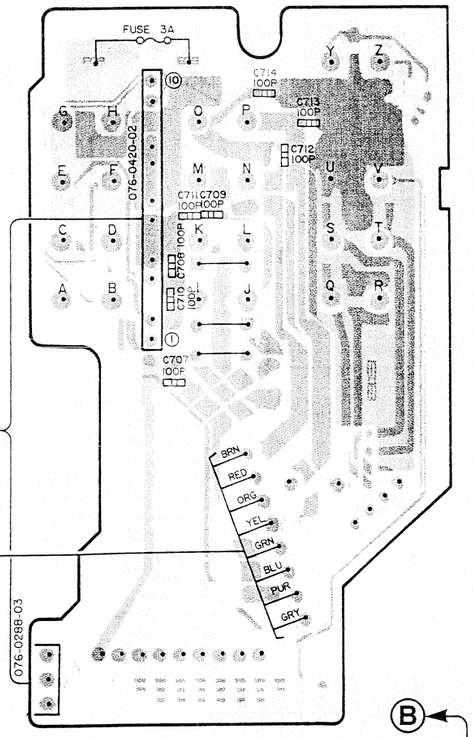
1	C-BUS DATA(SI/SO)	8	R-CH OUTPUT
2	C-BUS CLOCK(SCK)	9	MUTING
3		10	BACK UP
4	C-BUS SERVICE REQUEST	11	ACC CONTROL
5	+B REMOTE	12	GND
6	SIG. GND	13	
7	L-CH OUTPUT		

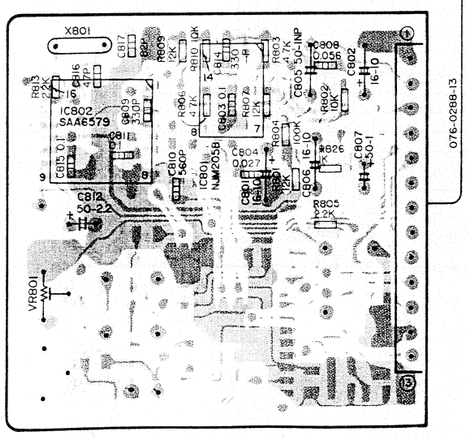
PRINTED WIRING BOARD: 2/2

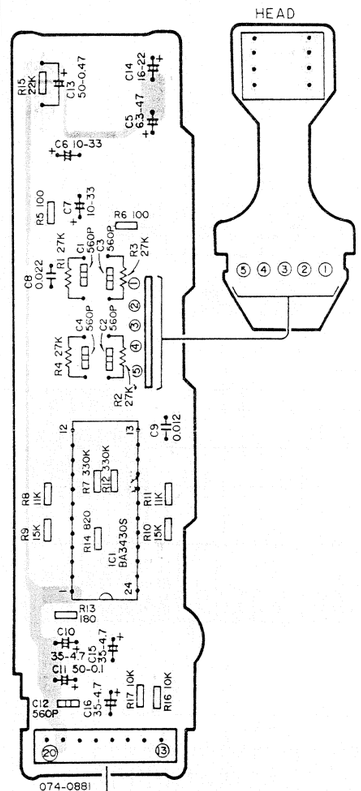


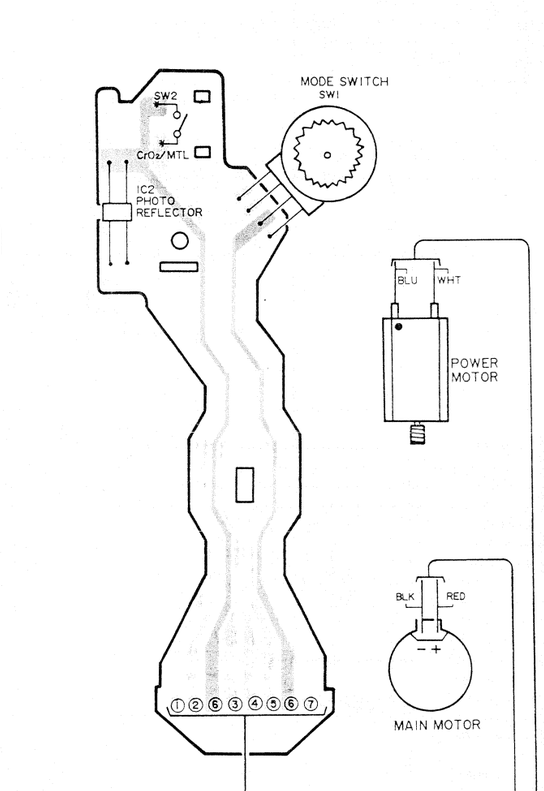


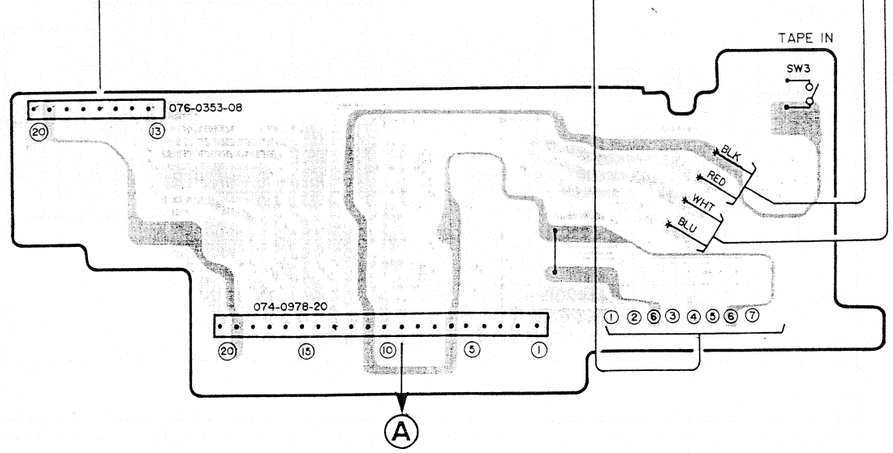
A		N	SP FRONT LEFT (+)
B	TELEPHONE MUTE	O	FRONT LEFT (–) IN
C	BACK UP	P	FRONT LEFT (+) IN
D		Q	
E	ILLUMINATION	R	
F	AUTO. ANTENNA	S	
G	GROUND	T	
H	ACC	U	
I	FRONT RIGHT (–) IN	V	
J	FRONT RIGHT (+) IN	W	
K	SP FRONT RIGHT (–)	X	
L	SP FRONT RIGHT (+)	Y	
M	SP FRONT LEFT (–)	Z	







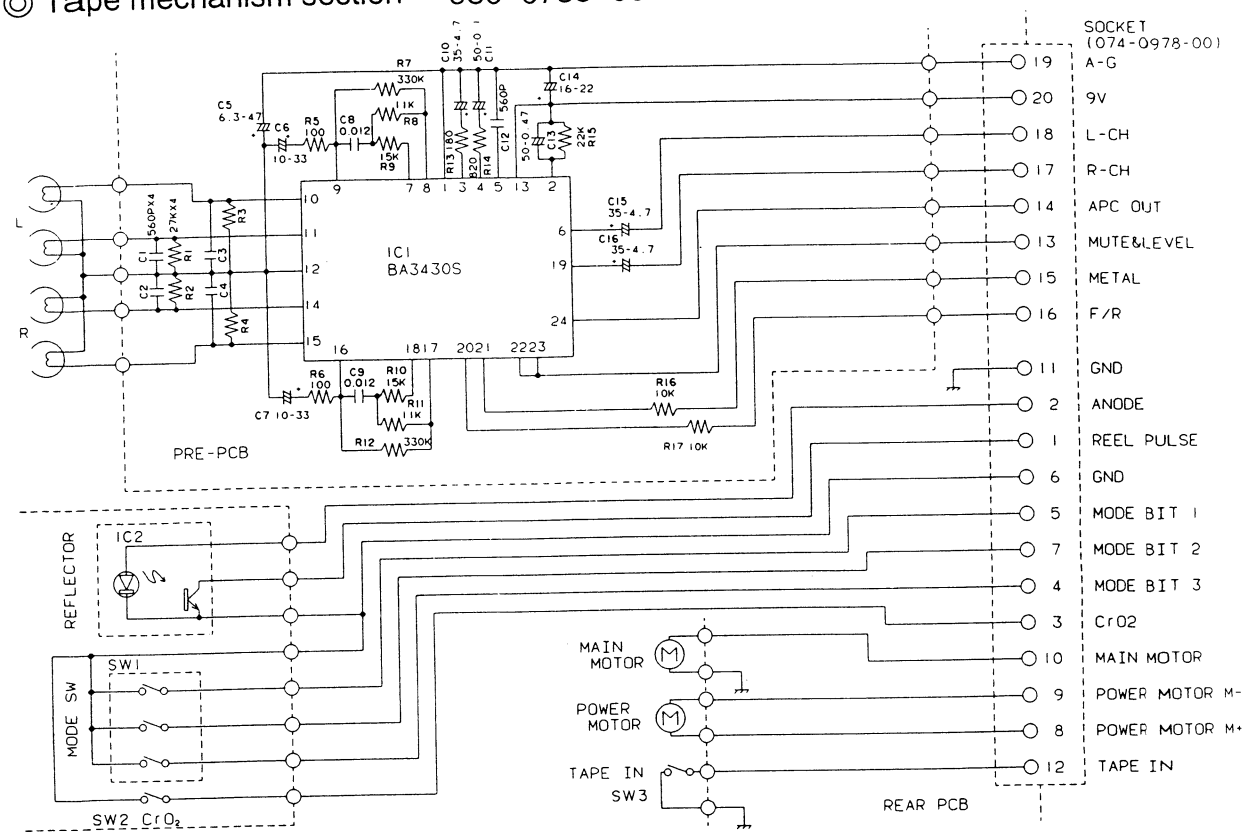




PU-9907A

■CIRCUIT DIAGRAM:

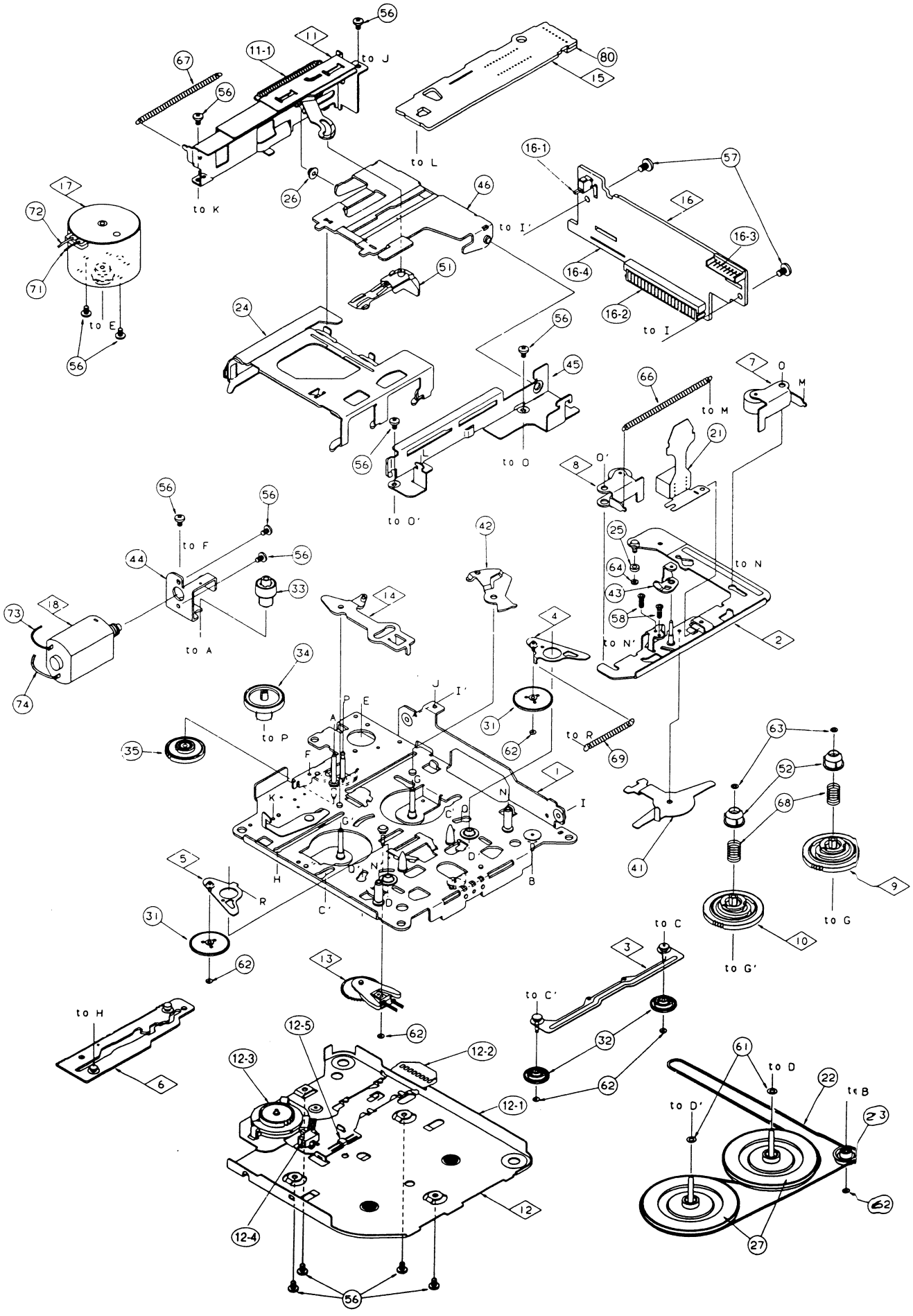
◎ Tape mechanism section 930-0735-00



■EXPLODED VIEW•PARTS LIST: ◎ Tape mechanism section 930-0735-00

NO	PART NO.	DESCRIPTION	QTY
1	960-4294-08	DECK PLATE-ASSY	1
2	960-4261-04	HEAD PLATE ASSY	1
3	960-4262-03	FF/REW P-ASSY	1
4	960-4263-01	IDLER-P-ASSY F	1
5	960-4264-01	IDLER-P-ASSY R	1
6	960-4266-05	MODE PLATE-ASSY	1
7	960-4269-04	ROLLER ASSY F	1
8	960-4270-04	ROLLER ASSY R	1
9	960-4271-02	REEL ASSY F	1
10	960-4272-02	REEL ASSY R	1
11	960-4298-90	EJECT SUB-ASSY	1
11-1	750-2948-01	SW-PLATE SPRING	1
12	960-4296-90	BOTTOM SUB-ASSY	1
12-1	960-4295-02	BOTTOM P-ASSY	1
12-2	099-9548-00	FLEX PWB	1
12-3	013-3951-00	SWITCH	1
12-4	013-3953-00	SWITCH	1
12-5	051-1114-03	IC NJL5161K-P	1
12-6	746-0767-00	WASHER	2
13	960-4282-03	DETECT-SUB-ASSY	1
14	960-4301-02	PLAY-L-ASSY GF	1
15	099-9540-00	SIDE PWB	1
15-1	074-0881-08	OUTLET SOCKET*8P	1
16	990-0692-00	REAR-PWB-ASSY	1
16-1	013-3906-00	SWITCH	1
16-2	074-0978-20	OUTLET SOCKET*20P	1
16-3	076-0353-08	PLUG*8P	1
16-4	099-9541-00	PWB	1
17	SMA-130-100	DC-MOTOR*MAIN	1
18	SMA-131-100	DC-MOTOR*POWER	1
21	011-0307-28	HEAD	1
22	602-0118-00	BELT	1
23	604-0046-00	TENSION PULLEY	1

NO	PART NO.	DESCRIPTION	QTY
24	606-0101-05	PACK GUIDE	1
25	610-0342-01	HEAD-P-ROLLER	1
26	610-0343-00	GUIDE A ROLLER	1
27	611-0091-02	FLYWHEEL	2
31	613-0285-02	IDLER GEAR	2
32	613-0286-02	FF/REW GEAR	2
33	613-0288-01	HERICAL GEAR	1
34	613-0289-01	GEAR A	1
35	613-0290-00	POWER GEAR	1
41	630-2597-01	CHANGE LINK	1
42	630-2598-04	EJECT LINK	1
43	630-2600-01	ADJUST LINK	1
44	630-2601-02	MOTOR PLATE	1
45	630-2626-01	PWB FRAME	1
46	630-2605-01	GUIDE ARM	1
51	631-1992-01	PACK STOPPER	1
52	631-1993-01	SLIDE BUSH	2
56	716-0484-00	SCREW*M2X2.25 B	13
57	716-0761-01	SCREW	2
58	716-0833-10	AZIMUTH SCREW	2
61	746-0624-00	WASHER	2
62	746-0724-00	WASHER	6
63	746-0761-00	WASHER	2
64	746-0762-00	WASHER	1
66	750-2946-02	PINCH SPRING	1
67	750-2947-01	EJECT-P-SPRING	1
68	750-2949-00	SLIDE SPRING	2
69	750-3017-01	IDLER-P-SPRING	1
71	800-4911-60	VINYL-COAT-WIRE*BLK	1
72	802-4911-60	VINYL-COAT-WIRE*RED	1
73	806-4914-60	VINYL-COAT-WIRE*BLU	1
74	809-4914-60	VINYL-COAT-WIRE*WHT	1



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